

WHAT IS CLAIMED IS:

1. A method for producing abrasive non-woven cloth comprising:
 - (a) forming a non-woven web of fibers including at least a first layer adjacent to a first surface of the web containing at least about 5% by weight of thermoplastic fibers;
 - (b) patterning the web so as to generate a pattern of raised regions and lowered regions in said first surface; and
 - (c) performing heat treatment on said web sufficient to cause at least part of said thermoplastic fibers to undergo changes in physical morphology, thereby imparting abrasive properties to at least said raised regions of said first surface.
2. The method of claim 1, wherein forming said non-woven web is implemented so as to include at least a second layer adjacent to a second surface of the web, said second layer containing primarily fibers which do not undergo changes in physical morphology under said heat treatment.
3. The method of claim 2, wherein said patterning is implemented so as to cause migration of at least a proportion of fibers within said first layer from said lowered regions to said raised regions.

4. The method of claim 2, wherein said patterning is implemented so as to cause migration of a majority of fibers making up said first layer in said lowered regions to said raised regions.

5. The method of claim 1, wherein said patterning is implemented by use of water jets to displace fibers.

6. The method of claim 5, wherein said water jets are directed towards a portion of said web passing over a cylinder with a perforated surface.

7. The method of claim 5, wherein said water jets are directed towards a portion of said web passing over a cylinder with a netting surface.

8. The method of claim 5, wherein said water jets are directed towards a portion of said web passing along a patterned conveyor belt.

9. The method of claim 5, further comprising a step of employing water jets to cause entanglement of fibers in the web.

10. The method of claim 1, wherein said patterning is implemented such that said raised regions include a plurality of isolated projecting features surrounded by said lowered regions.

11. The method of claim 1, wherein said patterning is implemented such that said raised regions include a plurality of elongated ridges.

12. The method of claim 1, wherein said thermoplastic fibers have a weight of no more than about 4.5 grams per 10,000 meters.

13. The method of claim 1, wherein said thermoplastic fibers have a weight of no more than about 2.2 grams per 10,000 meters.

14. The method of claim 1, wherein said first layer contains at least about 10% by weight of said thermoplastic fibers.

15. The method of claim 1, wherein said first layer contains less than about 50% by weight of said thermoplastic fibers.

16. The method of claim 1, wherein said first layer contains more than about 50% by weight of said thermoplastic fibers.

17. An abrasive non-woven cloth comprising at least a first layer of fibers adjacent to a first surface of the cloth, said first layer containing at least about 5% by weight of thermoplastic fibers heat treated so as to include a plurality of nodules, said first layer being patterned such that said first surface exhibits a pattern of raised regions and lowered regions.

18. The cloth of claim 17, further comprising at least a second layer of fibers adjacent to a second surface of the cloth, wherein said plurality of nodules are substantially only in said first layer.

19. The cloth of claim 18, wherein a majority of material from said first layer is located within said raised regions.

20. The cloth of claim 17, wherein said cloth is formed from a water entanglement process.

21. The cloth of claim 17, wherein said raised regions include a plurality of isolated projecting features surrounded by said lowered regions.

22. The cloth of claim 17, wherein said raised regions include a plurality of elongated ridges.

23. The cloth of claim 17, wherein said cloth is formed primarily from fibers having a weight of no more than about 4.5 grams per 10,000 meters.

24. The cloth of claim 17, wherein said cloth is formed primarily from fibers having a weight of no more than about 2.2 grams per 10,000 meters.

25. The cloth of claim 17, wherein said first layer contains at least about 10% by weight of said thermoplastic fibers.

26. The cloth of claim 17, wherein said first layer contains less than about 50% by weight of said thermoplastic fibers.

27. The cloth of claim 17, wherein said first layer contains more than about 50% by weight of said thermoplastic fibers.